

## CLAIMS

What is claimed is:

1. A cable modem for receiving down stream and transmitting upstream communication signals to a cable network having an upstream power control system for controlling power consumption comprising

a MAC chip for synchronizing upstream communication signals, and outputting an upstream control signal;

an upstream amplifier for receiving synchronized upstream communication signals from said MAC chip; and

a complex programable logic device (CPLD), coupled to said MAC chip and said upstream amplifier, which controls said amplifier in response to the upstream control signal from said MAC chip, such that said CPLD causes said upstream amplifier to power on during transmission of upstream signals and power off when not transmitting said upstream signals, thereby reducing power consumption of the cable modem.

2. The cable modem according to claim 1 wherein said CPLD generates an amplifier switch signal for connecting said upstream amplifier to an RF tuner for transmission of said upstream data signal to said headend, and an amplifier control signal for powering on and off said upstream amplifier.

3. The cable modem according to claim 2 wherein said CPLD generates said amplifier switch signal after said amplifier control signal is generated, thereby stabilizing said upstream amplifier.

4. The cable modem according to claim 3 wherein said CPLD continues generating said amplifier control signal after said CPLD ceases to generate said amplifier switch signal, thereby truncation of said upstream data signal is avoided.

5. A method of upstream power control for a cable modem comprising the steps of:

selectively generating an upstream unamplified communication signal along with a control signal; and

controlling an upstream amplifier in response to said control signal such that said upstream amplifier is powered on to amplify said unamplified signal when generated and powered off when no upstream communication signal is being generated, thereby reducing power consumption of said cable modem.

6. The method according to claim 5 further comprising generating an amplifier control signal and amplifier switch signal responsive to said control signal.

7. The method according to claim 6 wherein said amplifier switch signal is generated after said amplifier control signal.

8. The method according to claim 7 wherein said amplifier control signal continues to be generated after said amplifier switch signal ceases to be generated.

9. A cable modem for receiving downstream and transmitting upstream communication signals to a cable network having an upstream power control system comprising:

a control circuit for synchronizing upstream communication with a cable network headend, wherein an control signal is generated; and

an upstream amplifier for receiving synchronized upstream communication signals from said control circuit;

said control signal causing said upstream amplifier to power on during transmission of said upstream data signals and power off when not transmitting said upstream data signals, thereby reducing said power consumption of said cable modem.

10. The system according to claim 9 wherein said control signal comprises an amplifier control signal for controlling said upstream amplifier and an

amplifier switch signal for connecting said upstream amplifier to an RF tuner for transmission of said upstream data signal to said network headend.

11. The system according to claim 10 wherein said CPLD generates said amplifier switch signal after said amplifier control signal is generated, thereby stabilizing said upstream amplifier.

12. The cable modem according to claim 11 wherein said CPLD continues generating said amplifier control signal after said CPLD ceases to generate said amplifier switch signal, thereby truncation of said upstream data signal is avoided.

13. The system according to claim 9 wherein said control circuit comprises:

a MAC chip for synchronizing upstream communication signals, and outputting said upstream control signal; and

a complex programable logic device (CPLD), coupled to said MAC chip and said upstream amplifier, which controls said amplifier by generating said amplifier control signal and said amplifier switch signal in response to the upstream control signal from said MAC chip.